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EXAMINER	
NGUYEN, QUANG	
ART UNIT	**PAPER NUMBER**
1636	20

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/421,778	FULLER, JAMES T.	
	Examiner	Art Unit	
	Quang Nguyen, Ph.D.	1636	

-- The MAILING DATE of this communication app ars on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *9,10,18 and 19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,11-17,20 and 23-25* is/are rejected.

7)☒ Claim(s) *21 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Applicants' amendment filed on 6/18/03 has been entered as Paper No. 18.

Claims 1-25 are pending in the present application.

Claims 9-10 and 18-19 are withdrawn from further consideration because they are drawn to non-elected inventions.

Accordingly, amended claims 1-8, 11-17 and 20-25 are examined on the merits herein.

Following is a new ground of rejection.

Written Description

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8, 11-12, 15-17, 20 and 23-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111 (Fed. Cir. 1991), clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for

purposes of the 'written description' inquiry, *whatever is now claimed.*" Vas-Cath Inc. v. Mahurkar, 19USPQ2d at 1117. The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed. "Vas-Cath Inc. v. Mahurkar, 19USPQ2d at 1116.

Applicant's invention is drawn to a method of obtaining expression of an antigen of interest in a mammalian subject, said method comprises transferring into cells of said subject a nucleic acid construct comprising a minimal promoter sequence operably linked to a coding sequence for the antigen, wherein said antigen is expressed in said mammalian cells in an amount sufficient to elicit an immune response to the antigen; a purified and isolated minimal promoter sequence; a vaccine composition comprising the same nucleic acid construct; coated particles suitable for use in particle-mediated nucleic acid immunization, which particles comprise carrier particles coated with the same nucleic acid construct; and a particle acceleration device loaded with the same coated particles. The instant claims encompass compositions and methods of uses involving any minimal promoter sequence. Apart from disclosing the preparation of 3 human CMV (hCMV), simian CMV (sCMV) and pseudorabies virus (PRV) promoters represented by *Sal1/Bam1*, *Sal1/Sca1* and *Sal1/Not1* fragments of their respective enhanced promoters, the instant specification fails to provide a representative number of species for a broad genus of minimal promoter that has the same or similar functional properties as those described by the minimal hCMV, sCMV and PRV promoters (e.g., to express the coding sequence of an antigen in an amount sufficient to elicit an immune response to the antigen; particularly a dramatically increased antibody production

relative to the enhanced promoters *in vivo*). The instant specification fails to teach which essential or critical elements that other minimal promoters need to possess in order to have the same functional properties as those of disclosed minimal hCMV, sCMV and PRV promoters. For example, what are the structural features and/or structural boundaries constituting a minimal promoter for human α-actin promoter, HSP70 promoter, human proliferating cell antigen (PCNA) promoter, and that these minimal promoters would have the same functional properties as those of minimal hCMV, sCMV and PRV promoters? The claimed invention as a whole is not adequately described if the claims require essential or critical elements which are not adequately described in the specification and which are not conventional in the art as of Applicants' filing date. Possession may be shown by actual reduction to practice, clear depiction of the invention in a detailed drawing, or by describing the invention with sufficient relevant identifying characteristics such that a person skilled in the art would recognize that the inventor had possession of the claimed invention. Pfaff v. Wells Electronics, Inc., 48 USPQ2d 1641, 1646 (1998). The skilled artisan cannot envision the detailed structure of a representative species for a broad genus of a minimal promoter apart from the minimal hCMV, sCMV and PRV promoters to be utilized in the compositions and methods of uses as claimed, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co.*

Ltd., 18 USPQ2d 1016 (Fed. Cir. 1991). One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481, 1483.

Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Amended claims 1-8, 11-17, 20, 23 and 25 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of obtaining expression of an antigen of interest in a mammalian subject, which method comprises transferring into cells of said subject a nucleic acid construct comprising a minimal promoter sequence operably linked to a coding sequence for the antigen, whereafter said antigen is expressed in said mammalian cells in an amount sufficient to elicit an immune response to the antigen, and wherein the minimal promoter sequence consists essentially of a human cytomegalovirus (hCMV) immediate early promoter sequence, a pseudorabies virus (PRV) early promoter region, a simian cytomegalovirus (sCMV) immediate early promoter sequence or functional variant thereof; coated particles suitable for use in particle-mediated nucleic acid immunization, which particles comprise carrier particles coated with the same nucleic acid construct; and a particle acceleration device loaded with the same coated particles, does not reasonably provide enablement for the aforementioned compositions containing a nucleic acid construct comprising any minimal promoter sequence; a method of using the same compositions; and a vaccine composition containing the same nucleic acid construct. The

specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The factors to be considered in the determination of an enabling disclosure have been summarized as the quantity of experimentation necessary, the amount of direction or guidance presented, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art and the breadth of the claims. *Ex parte Forman*, (230 USPQ 546 (Bd Pat. Appl & Unt, 1986); *In re Wands*, 858 F.2d 731, 8 USPQ 2d 1400 (Fed. Cir. 1988)).

The specification teaches by exemplification the construction of Hepatitis B surface antigen (HbsAg) expression cassettes driven by full-length or minimal promoter systems (with or without enhancer, respectively) derived from simian CMV, human CMV and pseudorabies virus (PRV). The DNA constructs were coated onto gold carrier particles and administered to Balb/c mice using a particle-mediated delivery technique to the shaved bellies of the animals. Analysis of anti-HbsAg antibodies in sera taken from vaccinated mice six weeks later, revealed that minimal promoter system gave a significant improvement in antibody titer over the fully enhanced promoter system.

The above evidence has been noted and considered. However, the evidence is not reasonably extrapolated to the instant broadly claimed invention for the following reasons.

(a) Th breadth of the claims. The instant claims encompass a method of obtaining expression of an antigen of interest (the elected invention is to any viral,

bacterial, parasite or fungal pathogen antigen) in a mammalian subject, said method comprises transferring into cells of said subject a nucleic acid construct comprising any minimal promoter sequence operably linked to a coding sequence for the antigen, wherein said antigen is expressed in said mammalian cells in an amount sufficient to elicit an immune response to the antigen; wherein the nucleic acid construct is delivered directly into the subject or the nucleic acid construct is delivered *ex vivo* into cells taken from the subject; coated particles suitable for use in particle-mediated nucleic acid immunization, which particles comprise carrier particles coated with the same nucleic acid construct; and a particle acceleration device loaded with the same coated particles. Claim 25 is specifically drawn to a vaccine composition comprising a nucleic acid construct comprising any minimal promoter sequence operably linked to a coding sequence for any antigen of interest, any antigen of a viral, bacterial, or fungal pathogen (the elected invention) including those responsible for diseases such as AIDS, tuberculosis, cholera, typohoid, leprosy, malaria, kuru, Creutzfeldt-Jakob disease and others.

(b) The state and the unpredictability of the art. At the effective filing date of the present application, Chattergoon et al. (FASEB J. 11:753-763, 1997; Cited previously) state that "Though DNA vaccines have shown promise in animal models and have raised hopes, the technology is considered an emerging technology" (column 1, paragraph 2, page 762). Additionally, based on the idea that more antigen is better, most vectors utilized for DNA-based immunization use strong viral promoters (e.g., CMV promoter/enhance or RSV promoter/enhancer) and are geared towards maximum

expression (Norman et al., Vaccine 8:801-803, 1997). Other factors determining the immunogenicity of genetic vaccines include the plasmid backbone, amount of plasmids delivered, route of immunization, target tissue, strains of a particular species, and age of animals (Leitner et al., Vaccine 765-777, 2000; Cited previously, see Table 1). Leitner et al. further state "Although genetic vaccines have been significantly improved, they may not be sufficiently immunogenic for the therapeutic vaccination of patients with infectious diseases or cancer in clinical trials" (see abstract). It is also recognized that an animal model should correlate to the disease conditions studied, and that it is impossible to predict whether an untested antigen of an infectious pathogen would elicit a protective immune response in a given type of animal. A skilled artisan has also recognized that results observed in an animal model system following testing of a DNA expression vector-based agent are not predictive of outcome or efficacy in applications in other species of animal or in humans, due to differences in anatomy, cell biology, genetics, and immunology between different types of animals and between the animal models and humans. This is supported by the teachings of McCluskie et al. (Mol. Med. 5:287-300, 1999) who stated that "it is probably safe to say that any vaccine that works in a human will work in a mouse, but not necessarily vice versa. Therefore, it is difficult to predict from mouse studies the potential of a new vaccine for humans. In fact, in those human trials that have carried out, none of the DNA vaccines induced the strong immune responses that had been seen in mice with the same vectors." (column 2, last paragraph, page 296).

(c) The amount of direction or guidance presented. Apart from the disclosing that a DNA construct containing a minimal promoter derived from simian CMV, human CMV or pseudorabies virus (PRV) operatively linked to a sequence encoding Hepatitis B surface antigen yields a significant improvement in antibody titer in mice over the respective fully enhanced promoter, the instant specification fails to provide sufficient guidance for a skilled artisan on the make and use of other minimal promoters having the same functional properties as those of hCMV, sCMV, PRV minimal promoters. It is not entirely clear that the significant improvement in antibody titer observed in mice would also be expected for DNA constructs containing other minimal promoters and that the observation is not due to the specific properties of the hCMV, sCMV and PRV minimal promoters. A minimal promoter is usually very weak, and therefore at the effective filing date of the present application most vectors utilized for DNA-based immunization utilize strong viral promoters (e.g., CMV promoter/enhance or RSV promoter/enhancer) to gear towards maximum expression (Norman et al., Vaccine 8:801-803, 1997). The physiological art is already recognized as unpredictable (MPEP 2164.03), let alone for attaining therapeutic effects contemplated by Applicant through the induction of an immune response to an antigen of any viral, bacterial, parasite or fungal pathogen through the use of a nucleic acid construct comprising any minimal promoter operatively linked to a coding sequence for the antigen.

Furthermore, with respect to claim 25 that is specifically drawn to a vaccine composition, the instant specification fails to provide sufficient guidance for a skilled artisan on how to obtain any prophylactic or protective effect against any viral, bacterial,

parasite or fungal pathogen such as those responsible for AIDS, tuberculosis, cholera, typohoid, leprosy, malaria, kuru, Creutzfeldt-Jakob disease and others. The simple increased anti-HbsAg antibody titer in sera taken from mice being vaccinated with a plasmid vector system containing a minimal promoter of the present invention is not reasonably correlated to any prophylactic or protective effect against any viral, bacterial, parasite or fungal pathogen, particularly in light of the state and the unpredictability of the DNA vaccine art discussed above. Even many years after the effective filing date of the present application, an effective DNA vaccine for diseases such as AIDS, Creutzfeldt-Jakob disease, tuberculosis, malaria, hepatitis remains elusive.

With respect to the breadth of the presently claimed invention, Applicants' attention is further directed to the decision in *In re Shokal*, 113 USPQ 283 (CCPA 1957) wherein is stated:

> It appears to be well settled that a single species can rarely, if ever, afford sufficient support for a generic claim. In re Soll, 25 C.C.P.A. (Patents) 1309, 97 F.2d 623, 38 USPQ 189; In re Wahlforss et al., 28 C.C.P.A. (Patents) 867, 117 F.2d 270, 48 USPQ 397. The decisions do not however fix any definite number of species which will establish completion of a generic invention and it seems evident therefrom that such number will vary, depending on the circumstances of particular cases. Thus, in the case of small genus such as the halogens, consisting of four species, a reduction to practice of three, or perhaps even two, might serve to complete the generic invention, while in the case of a genus comprising hundreds of species, a considerably larger number of reductions to practice would probably be necessary.

Additionally, the courts have also stated that reasonable correlation must exist between scope of exclusive right to patent application and scope of enablement set forth in the patent application (27 USPQ2d 1662 *Ex parte Maizel.*).

Accordingly, due to the lack of sufficient guidance provided by the instant specification on the issues discussed above, the unpredictability and state of the genetic vaccine arts, particularly for obtaining prophylactic or protective immune response

against any viral, bacterial, parasite or fungal pathogen, and the breadth of the claims, it would have required undue experimentation for one skilled in the art to **make and use** the instant broadly claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Amended claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Hofmann et al. (Proc. Natl. Acad. Sci. 93:5185-5190, 1996). This is a new rejection necessitated by amended claim 25.

The claim is drawn to a vaccine composition containing a nucleic acid construct comprising a minimal promoter sequence operably linked to a coding sequence for an antigen of interest. It should be noted that for a composition claim, its intended use is not given any patentable weight.

Hofmann et al. disclosed a recombinant retroviral vector construct (SIN-RetroTet vector) containing an autoregulatory cassette comprising a heptamerized tet operator sequence $(TetO)_7$ fused to the human CMV immediate early minimal promoter P_{hCMV^*-1}

(See Fig. 1), operably linked to *lacZ* which encodes a beta-galactosidase (an antigen). The recombinant retroviral vector construct of Hofmann et al. meets every limitation of a nucleic acid construct in the vaccine composition of the presently claimed composition.

Thus, the reference anticipates the instant claim.

Claim 24 and amended claim 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Gu et al. (U.S. Patent No. 6,200,751). This is a new rejection necessitated by the amended claim 25.

Claim 24 is drawn to a purified, isolated minimal promoter sequence, while claim 25 is directed to a vaccine composition containing a nucleic acid construct comprising a minimal promoter sequence operably linked to a coding sequence for an antigen of interest. With respect to claim 25, it should be noted that for a composition claim, its intended use is not given any patentable weight.

Gu et al. disclose the isolation and uses of the minimal promoter of the endothelial cell protein C binding protein, EPCR, operably linked to a gene coding for a protein of interest in expression vectors, including plasmid vectors, e.g. pEGFP1 (**See col. 4, lines 24-36**, lines 45-47; example 3, col. 5, lines 42-49 and the claims). According to Molecular Biotechnology text book (Glick, B.R. & Pasternak, J.J., eds., 1994), a "promoter" is defined as a segment of DNA to which RNA polymerase attaches. It usually lies upstream of (5' to) a gene. A promoter sequence aligns the RNA polymerase so that transcription will initiate at a specific site (page 475). While "enhancer" is defined as a DNA sequence that increases the transcription of a

eukaryotic gene when they are both on the same DNA molecule. Enhancer is also referred as enhancer element or enhancer sequence (page 461). As such, the promoter including a region resulting in selective expression in endothelial cells, between –1 and –220 based on the positions relative to the ATG encoding the first amino acid of the murine EPCR protein disclosed by Gu et al. (col. 1, lines 58-63, col. 4, lines 24-36) meets the limitation of the "minimal promoter" of the instant invention which merely requires a promoter sequence without its endogenous enhancer. The encoded green fluorescent protein in the pEGFP1 is an antigen because it is capable of inducing a host immune response in an individual that normally does not naturally habor said gene product. As defined by the instant specification, an antigen refers to any agent, generally a macromolecule, which can elicit an immunological response in an individual (page 7, lines 7-8). The nucleic acid constructs of Gu et al. meet every limitation of a nucleic acid construct in the vaccine composition of the presently claimed composition.

Therefore, Gu et al. anticipate the instant claims.

Response to Arguments

Applicant's arguments related to the above rejection in the Amendment filed on 6/18/03 in Paper No. 18 (pages 6-8) have been fully considered, but they are not persuasive.

Applicant argues mainly that Gu discloses two promoters: (1) a sequence spanning from –350 to –1 of the mouse EPCR promoter and (2) a sequence spanning from –1080 to –1 of the mouse EPCR promoter, and that neither appears to be a

minimal promoter since these promoters would be expected to have retained normal enhancer sites. Applicants further argue that a promoter sequence of just –220 to –1 was never produced, nor was it suggested for production. Applicants' arguments are respectfully found to be unpersuasive for the following reasons.

Firstly, Applicant has not provided a single factual evidence to support Applicants' assertion that at least the sequence spanning from –350 to –1 still contains any normal enhancer site. Applicant states simply that this promoter would be expected to have retained normal enhancer sites. The sequence spanning from –350 to –1 contains two elements: a minimal promoter (-220 to –1) and an inducible element (-350 to –220). An inducible element functions only in the presence of exogenous specific inducible agents, and therefore this inducible element is not considered to be an enhancer.

Secondly, **col. 4, lines 24-36** in the issued U.S. patent of Gu et al. state clearly "**These regulatory elements can be used alone** or in various combinations, as demonstrated by the examples, to determine where and to what extent expression is obtained, both *in vitro* and *in vivo*. Region A can drive endothelial cell specific expression. Adding to this region A, region C would result in expression occurring in large vessels. Adding region B to these regions A and C, results in a thrombin response". Region A is the promoter sequence of just –220 to –1, while region B is the sequence spanning between -350 to –220 and region C is the sequence spanning between –1080 to –700 (see Fig. 4).

Claims 24 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Deb et al. (J. Virology 66:6164-6170, 1992).

With respect to claim 25, it should be noted that for a composition claim, its intended use is not given any patentable weight. The rejection of claims 24 and amended claim 25 is maintained for reasons of record set forth in the previous Office Action in Paper No. 17.

Response to Arguments

Applicant's arguments related to the above rejection in the Amendment filed on 6/18/03 in Paper No. 18 (pages 12-13) have been fully considered, but they are not persuasive.

Applicant argues mainly that it is the Office's obligation to establish a *prima facie* showing of anticipation before any burden shifts to applicant to rebut the same with a factual showing. Applicants submits that it is more plausible that the –169 to –131 region of the promoter described by Deb reference contains enhancer elements, and the Office fails to show that Deb excised all native enhancers from this promoter sequence.

Applicant's arguments are respectfully found to be unpersuasive because Deb et al. disclose a plasmid comprising a minimal human proliferating cell antigen (PCNA) promoter with a TATA box alone operably linked to a CAT gene (see Fig. 6), and that Deb et al. do not mention that the –169 to –131 region still contains any native enhancer. The U.S. Patent Office is not equipped with a laboratory to provide evidence

for Applicant that the –169 to –131 region would or would not contain any native enhancer. It is Applicant's burden to show factual evidence that the aforementioned region still contains a native enhancer, and not simply stating that it is plausible that the promoter of Deb still contains enhancer sequences in this region.

Accordingly, the claims are rejected under 35 U.S.C. 102(b) as being anticipated by Deb et al. (J. Virology 66:6164-6170, 1992) for the same reasons set forth in the previous Office action.

Claims 1-3, 5-8, 12-13, and 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Bujard et al. (U.S. Patent No. 5,888,981). This is a new rejection.

Bujard et al. disclose both *in vivo* and *ex vivo* methods for a regulated expression of a gene of interest in a cell in a subject, including human, using a tetracycline-controlled expression system (see abstract and cols. 27-33). The regulated expression system comprises a polynucleotide molecule encoding for a protein of interest, wherein the polynucleotide is operably linked to a tTA-responsive promoter that contains a minimal hCMV promoter (positions +75 to –53 to +75 to –31), and the protein of interest includes the X-protein of HBV (col. 23, lines 22-61), trans-dominant negative tat, rev and env mutants for HIV or transdominant Icp4 mutants for HSV (col. 28, lines 57-67), a viral protein such as adenovirus E19 protein (col. 32, lines 52-55). The expression of such proteins of interest in a subject in the absence of tetracycline would elicit an immune response to the proteins. Bujard et al. also teach the preparation of the minimal promoters hCMV-1* and hCMV*-2 (see col. 36, lines 44-60).

Accordingly, the teachings of Bujard et al. meet the limitation of the instant claims, and therefore Bujard et al. anticipates the instant claims.

Claims 24-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Chao (U.S. Patent No. 6,368,825). This is a new rejection.

With respect to claim 25, it should be noted that for a composition claim, its intended use is not given any patentable weight.

Chao discloses the preparation of a CMV minimal promoter sequence of SEQ ID NO:1 to drives the expression of an RNA or a protein (e.g., green fluorescent protein) in a baculovirus vector (see abstract and Summary of the Invention). The recombinant baculovirus vector of Chao meets every limitation of a nucleic acid construct in the vaccine composition of the presently claimed composition.

Accordingly, Chao anticipates the instant claims.

Conclusions

No claims are allowed.

Claims 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang Nguyen, Ph.D., whose telephone number is (703) 308-8339.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's mentor, Gerald Leffers, Jr., Ph.D., may be reached at (703) 305-6232, or SPE, Remy Yucel, Ph.D., at (703) 305-1998.

Quang Nguyen, Ph.D.

Gerald D. Leffers Jr.
PATENT EXAMINER